ABSTRACT

A bidirectional module for activation of gene expression and regulation of transcription in both directions is disclosed. The bidirectional module comprises multiple cis regulatory DNA sequence elements, strategically arranged to give a 'Transcription Activating Module' that achieves high level expression from a 'Transcription Initiation Module'. The latter functions like a minimal promoter. The former activates transcription simultaneously in both the directions from the latter and also responds to several transcription inducing, external stimuli in both the directions. Since it is an artificially designed bidirectional transcription module, it has no equivalent DNA sequence in plant genome. This reduces the chances of the genes from being silenced by homology based mechanisms. A bidirectional promoter module as this, can therefore be used to develop efficient vectors for genetic engineering in plants.